

## IMPROVED SENSING ELEMENT ARRANGEMENT FOR A FINGERPRINT SENSOR

### ABSTRACT OF THE DISCLOSURE

[0048] For each pixel in an array of pixels in a fingerprint sensor, a fingerprint capacitor is defined by the fingerprint-bearing skin of a user's finger proximate to the top exposed surface of a sensing plate of the pixel. First and second plates are embedded in dielectric material beneath the sensing plate, and define therewith first and second capacitors of a sensing element. The capacitance of the fingerprint capacitor is coupled by the sensing element to an amplifier. During a sensing operation, the amplifier generates a pixel output signal that is a function of the variable capacitance of the fingerprint capacitor, which varies according to the presence of a fingerprint ridge or valley appearing directly above the sensing plate when the user's finger is in contact with the fingerprint sensor.